

ABSTRACT OF THE DISCLOSURE

5 The present invention is directed to the use of agents that induce high levels of cell surface molecules to provide targets for immunotoxins directed against the same cell surface molecules. A specific example is given in which all-*trans*-retinoic acid (RA) is used to induce high levels of CD38 cell surface antigen expression in several myeloid and lymphoid leukemia cells. CD38 was then used
10 as target for delivering plant toxin (gelonin) to leukemia cells. Treatment of leukemia cells with RA induced high levels of CD38 in those cells that otherwise had low CD38 expression. The RA-induced leukemia cells then became exquisitely sensitive to an immunotoxin constructed from an anti-CD38 monoclonal antibody conjugated to
15 the plant toxin gelonin.